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ABSTRACT

The Discrepancy Evaluation Model (DEM), developed in 1966 by Malcolm Provus, provides information for program assessment and program improvement. Under the DEM, evaluation is defined as the comparison of an actual performance to a desired standard. The DEM embodies five stages of evaluation based upon a program's natural development: program design, installation, process, product, and cost benefit analysis. The evaluation information collected by the DEM facilitates rational decision making by career planning and placement counselors. These decisions can be divided into three classes: decisions related to program design or analysis, decisions concerning the achievement of both intermediate and final goals, and decisions about the program in operation. As an example, the DEM is applied to a university career planning program. This particular program assists students in determining their interests and goals, implementing career and postgraduate decisions. (Author/MV)

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THE DISCREPANCY EVALUATION MODEL:
A SYSTEMATIC APPROACH FOR THE EVALUATION OF CAREER PLANNING AND PLACEMENT PROGRAMS

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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One of the critical elements lacking in the training of career planning counselors is in the administration and evaluation of their programs. Career planning staff are faced with the challenge of establishing meaningful goals, planning appropriate programs, and evaluating the outcomes of these programs. The Discrepancy Evaluation Model is a useful tool to career planning staff in making timely and defensible decisions in the above three areas which alter and improve their programs. By providing training on this evaluation model, career planning counselors will become more adept at both managing and evaluating their own programs.

Introduction

One of the critical elements lacking in the training of career planning counselors is in the administration and evaluation of career counseling programs. Counselors are provided with extensive exposure to and experience in counseling techniques; however little, if any, time is devoted in their training toward administration and evaluation of counseling programs. Granted that all counselors do not assume administrative or managerial roles, staff counselors are frequently called upon to develop and deliver actual counseling programs. These responsibilities do require some skills in administration and evaluation; more simply, career planning counselors should be able to determine the effectiveness of their counseling efforts. Training in evaluation would allow them to do this in the following manner. First, it would help them to identify individual components of the counseling program and the goals or objectives of each. Once these components and goals are specified, procedures can be developed which will provide systematic information on the actual operation and outcomes of the counseling program. An additional benefit is the dual use of this information; it can also be used to establish the accountability of the career planning counseling program, a growing concern of all such programs. This paper has three main objectives. Readers are first provided with theoretical background on the Discrepancy Evaluation Model (DEM) as it relates to the management of a career counseling program. The second objective of this paper is to share an actual application of the DEM to a university career planning program. Finally this paper will discuss the advantages in implementing this evaluation system for career planning program staff.

Theoretical Background of the DEM

The Discrepancy Evaluation Model (DEM) was developed in 1966 by Malcolm Provus to serve the dual purposes of providing information for program assessment and for program improvement. Since that time, it has been revised periodically as a function of the experience of practitioners. The DEM focuses on the total program. Information obtained through evaluation is designed to assist career planning program staff in making timely and defensible decisions which change and improve programs in their stages of development and operation.

Under the DEM, evaluation is defined as the comparison of what is, a performance, to what should be, a standard. If a difference is found to exist between the standard and the performance this difference is known as a discrepancy. The concept of a standard is not new to evaluation. Without a standard---some implicit intent or expectation, or model of excellence---evaluation is impossible. The problem has been that such standards are either not made public, not shared by all relevant parties, or not made sufficiently specific and comprehensive to be useful in judging or improving instructional programs. The DEM, based on the techniques of systems analysis, addresses these inadequacies. A standard defines the intent of a program by describing expected inputs, processes, and outputs, and charting their interrelationships. In other words, what will go into a program (people, resources, etc.), what activities and operations will take place within it, and what changes or products should come out of it are all specified. This is referred to as a program design in the DEM.

In addition to the program design stage, DEM embodies four other stages of evaluation based upon a program's natural development. These other stages are installation, process, product, and cost benefit analysis.

Installation evaluation (Stage 2) investigates whether the program has been installed as planned. In its simplest form, this involves checking to see that material inputs, (such as clients, counseling staff, career counseling materials) are present at the time and in locations prescribed, and that planned processes have actually been set into motion. In a more complex form, installation evaluation measures and reports on the extent to which certain critical preconditions have been met.

Process evaluation (Stage 3), at its basic level, monitors the sequential accomplishment of enabling objectives (those objectives which must be achieved in order to meet the final goals of a program). At a higher level, process evaluation seeks both to clarify the relationships between intended processes and the accomplishment of objectives and to gain knowledge of intervening factors. As such knowledge is gained, more detailed enabling objectives are posited, tested, and documented. Meanwhile, a precise record of connections between program events and interim effects builds, eventually providing persuasive "proof" of the program's value.

Installation and process evaluation are instrumental in improving and stabilizing developing programs. Once stability has been achieved, then product evaluation (Stage 4) is appropriate. Final objectives of the program are assessed at this point, using variables isolated during process

evaluation. An advantage of conducting process and product evaluation is that if final program objectives have not been met, it is then possible to determine what went wrong and often find evidence of other more successful activities within the program.

The DEM also posits a fifth evaluation stage, cost-benefit analysis, in which two or more similar programs would be compared. This represents the final step in the evaluation process. At present, too little information exists to make comparisons across programs. Consequently further discussion of this stage will not be pursued at this time.

Discrepancy evaluation is intended to complement the activities of program administration, not supplant them. The model operates within a well-defined scope, and there are certain things the DEM is not designed to do. The DEM is not intended to select from alternative programs elegible for installation, nor to make value judgments about the standard selected. The model does not ask "why are you willing to pay the input price?" but rather, "will the input buy the output?" Just as the evaluator does not set the original standard, neither does he become involved in the creation or selection of revised standards in response to discrepancy information. The evaluator can help to explain the significance of the discrepancy in terms of its reliability or validity, but he/she should not become substantively involved in the problem solving activity which follows. Whatever research and development work may need to be done should be done by others. Participation by the evaluator in these kinds of activities would rob the program staff of its proper problem-solving initiative.

More importantly, it would disqualify the evaluator from rendering a disinterested and objective evaluation.

Discrepancy evaluation and the information it provides do not automatically make decision-making rational; they do, however, increase the rationality of decision-makers by clarifying alternatives and making clear the basis on which decisions are made. In summary, discrepancy information is pertinent to decision-makers because they have set the standards to which it refers, and they take action in response. It is the evaluator, however, who ensures that the necessary questions have been asked, and that the information used to answer those questions is relevant and accurate.

Application of the DEM

Student development services are particularly amenable to application of the DEM. An exemplar career planning and placement program demonstrates the viability of this approach. The exemplar career planning & placement program does not operate like a typical employment agency. Instead it is designed to assist students in identifying and achieving their individual career objectives. The major goals of this program are for students to learn about themselves and how to plan and influence their future so that they will have the ability to "place" themselves. The exemplar program has developed six objectives which direct its efforts. They are:

1. To stimulate students' interest in early planning and investigation of post-graduate options and to inform students of the range of possible post-graduate options available to them.

2. To assist students in appraising their career-related interest and abilities.

3. To assist students in determining their personal short and long range career objectives.

4. To assist students in learning how to systematically plan an approach to employment or graduate-professional school admission.

5. To assist students in developing initiative, independence, and realism in the career or post-graduate decision-making process.

6. To assist students in implementing career and post-graduate decisions.

Both a model for program evaluation and a career planning and placement program have been presented. The following section examines how the two interact. Applying the DEM entails a series of systematic steps: 1) construction of a program design, 2) formulation of an evaluation design, 3) development of the evaluation workplan, 4) implementation of the evaluation design according to the evaluation workplan, 5) feedback of the results to the program staff. Each of these steps will be described in greater detail below.

To review, a program design can be thought of as a blueprint of a given program. It is simply a description of how the program is intended to operate. Three critical pieces of information are contained in a program design: first, the major functions or activities of the program; second, the goals or objectives for which each of the major functions has been designed; and third, the resources necessary for each of the major activities to occur. The program design serves as the standard to which the operation (or performance) of the program is readily compared.

Because so many programs are complex organizational structures, it is

helpful to employ a systems analytic technique to describe them. A program design consists of two key ingredients. First is a graphic representation or network of the major functional components of the program with interrelationships charted among the components. Second, each component is further analyzed by describing the inputs (resources), processes (functions/activities), and outputs (goals/objectives/outcomes). Each major component can then be analyzed into subcomponents with their appropriate input-process-output descriptions.

A sample network for the exemplar career planning and placement office appears in figure 1. Eight functions were identified during the construction of the program design. Three of these components (component 2.0 - provide career and graduate study planning/counseling, component 3.0 - conduct placement activities, and component 5.0 - offer outreach programs) pertain directly to counseling services offered to clients. Another three components (component 1.0 - operate resource library, component 4.0 - supervise/train student assistants, and component 6.0 - communicate OCPP activities) provide auxilary services for program operation. The remaining two components (component 7.0 - administer program and component 8.0 - operate staff development/consultation) relate to management functions. Arrows indicate functional relationships or dependencies among different components. For example, students trained in component 4.0 - supervise/train student assistants provide career and graduate study planning/counseling (component 2.0). Ordinarily narrative input-process-output descriptions would be written for the total program and then for each of these eight components. For the purposes of this paper, only the descriptions of the

total program and one of these components are provided in Figures 2 and 3 respectively. The left column of each figure contains the necessary resources (input) in order for the program or counseling to occur. The major activities (process) for the total program and component 2.0 are described in the middle column. Outcomes (output) identified by the program staff appear in the right columns.

Following completion of the program design and subsequent approval by the program staff, it is then necessary to design the evaluation. An evaluation design consists of a set of evaluation questions. For each question it is necessary to include a rationale, or why it is important to address this question. It is also important to clarify how the question relates to the program design and how the findings will be used by program staff. The focus, boundaries, and limitations of the evaluation are determined in this process. Deciding what to evaluate is frequently difficult. Several guidelines help the program staff and evaluator to select evaluation concerns. Some of these criteria are: 1) areas related to components of functional importance, 2) areas that are problematic, and 3) areas of both external and internal political concern. Usually more concerns are identified than is possible to address at one time; program staff must then prioritize these concerns. The above criteria are also helpful in this regard.

For the exemplar career planning and placement program, three evaluation questions were initially identified by the program staff. A design developed for these three questions appears in Figure 4. It should be

noted that the first and third questions pertain primarily to components of functional importance. The second question addresses an area problematic to program staff and especially critical to external evaluation audiences. (This is reflected in the statements of rationale provided in the third column of Figure 4.) Rationale statements were developed for each of the identified evaluation questions.

The third step in conducting a program evaluation is to operationalize the evaluation design. This is accomplished by developing an evaluation workplan, which includes identification of respondent sample, construction of instrumentation, collection and analysis of data, and reporting of summarized evaluative data to program staff. Essentially, the evaluation workplan consists of step-by-step procedures of how to carry out the evaluation.

For example, one of the identified evaluation questions listed by the exemplar career planning and placement staff concerned clients' perceptions and satisfaction with the counseling received. Consequently, an evaluation workplan was developed which prescribed that all clients receiving counseling would complete an instrument designed to obtain this information. Procedures for tabulation, analysis, and reporting of data were included. After designing the evaluation workplan, it must then be implemented as specified.

Once the findings have been reported to the program staff by the evaluator, the program staff then compare the program's actual level of performance to its intended level of performance. Three possibilities can

occur here. It is useful to consider them in relation to the identified evaluation question concerning clients' satisfaction with career and graduate study planning/counseling. First, a positive discrepancy could occur (or clients' responses to counseling items are higher than that prescribed by the standard). In this case, staff counselors are providing excellent counseling; no program modifications are necessary. However, the opposite might occur (clients' responses fell below that prescribed by the standard). In the negative discrepancy case, two decisions are possible. The program staff may decide that the standard is unrealistic and that it should be modified. Or program staff may decide that, indeed, the standard is realistic and that revisions in the actual counseling procedures are necessary. The third possibility that can result in comparing program performance to the program design standard is that the two match, or no discrepancy between performance and standard occurs. The program then is operating according to intent. Regardless of which prossbility occurs, it is crucial to the evaluation process that program staff compare the findings to the standard. This, in fact is the intent and function of program evaluation.

Advantages of DEM Evaluation

Program evaluation is always intended to provide program staff with some type of useful information about their program. In some cases, the information gathered may only report on the final outcomes of the program; more simply, whether the program accomplished what it set out to accomplish. Other more sophisticated evaluation efforts in addition gather information

about the program in operation. The DEM, as described above, is intended to collect information not only about program outcomes, but also about program inputs and processes. This evaluation information is useful to career planning and placement staff in that it facilitates rational decision-making about their respective programs. These decisions can be divided into three classes: 1) decisions concerning the achievement of both intermediate and final outcome goals or objectives, 2) decisions related to program design or analysis, and 3) decisions about the program in operation. Each of these will be explained in greater detail below.

The first area concerns decisions about the achievement of both intermediate and final outcome goals or objectives. Evaluation information is gathered which will be used to determine the effectiveness of the career planning and placement program. Data is consequently collected about variables directly related to each of the programs' objectives or goals. For example, one of the objectives of the exemplar career planning and placement program is to assist students in appraising their career-related interests and abilities. Therefore, evaluation information would be collected about students' appraisal of their career-related interests and abilities. Once this evaluation information is fed back by the evaluator to the program staff, they are then in a position to determine the effectiveness of their program in achieving this goal or objective by comparing it to the program standard. This procedure could be followed for each of the goals or objectives to be examined in the program evaluation effort. By obtaining such evaluation information, program staff are able to judge

the effectiveness of the program. This will facilitate not only documentation of the program's effectiveness, but also the development and implementation of any necessary revisions in the design of the program if program goals or objectives are not met.

Decisions about program design or analysis comprise the second area. Information collected in this area relate primarily to the design of the program. Questions typically addressed in this area include: 1) do each of the separate components of the program fit together? (or the internal consistency of the program) and 2) will the program designed produce the desired outcomes? (or the comprehensiveness of the program). Evaluation information in this area is useful in that it provides a systematic method by which program staff can analyze their program to predict its possible success. If there are gaps in the program's design or the program is lacking in depth, the probability of success is obviously much less. By obtaining evaluation information in this area, program staff can correct design difficulties in advance and consequently guarantee a better change of the program's success. Along with this, all program staff members are aware of their respective roles and responsibilities and how each of them individually fits into the total program. This type of clarification helps alleviate later problems which result from confusion over staff responsibilities.

The final area of decision-making focuses on program operation. Collected evaluation information monitors the operation of the program, much like routine monitoring that a program administrator might perform informally; however, in this case, the monitoring is far more formalized and

organized. By collecting such information, program staff are first aware of all of the operations of the program. Secondly, it also provides a means by which program staff may troubleshoot potential problems before they occur. By identifying potential problems before they occur, many may be eliminated and others significantly minimized. An additional advantage to program staff collecting program operation information is that it provides a comprehensive record of what actually occurred during the program. This is helpful if desired outcomes are not achieved; program staff can then trace the sequence of activities that should have produced the desired outcome and locate the breakdown in events. This is especially helpful if the program is to be repeated in the future.

DEM evaluation has been demonstrated to be an effective tool for career planning and placement staff. It serves not only as a documentation of the programs effectiveness, but also as a management-administration mechanism to insure the program's success. Given that career planning and placement staff want to provide for the success of their counseling programs in every feasible way, DEM evaluation provides one effective means of insuring the program's success.

Figure 1

Career Planning and Placement

Program Design Network of Exemplar Project

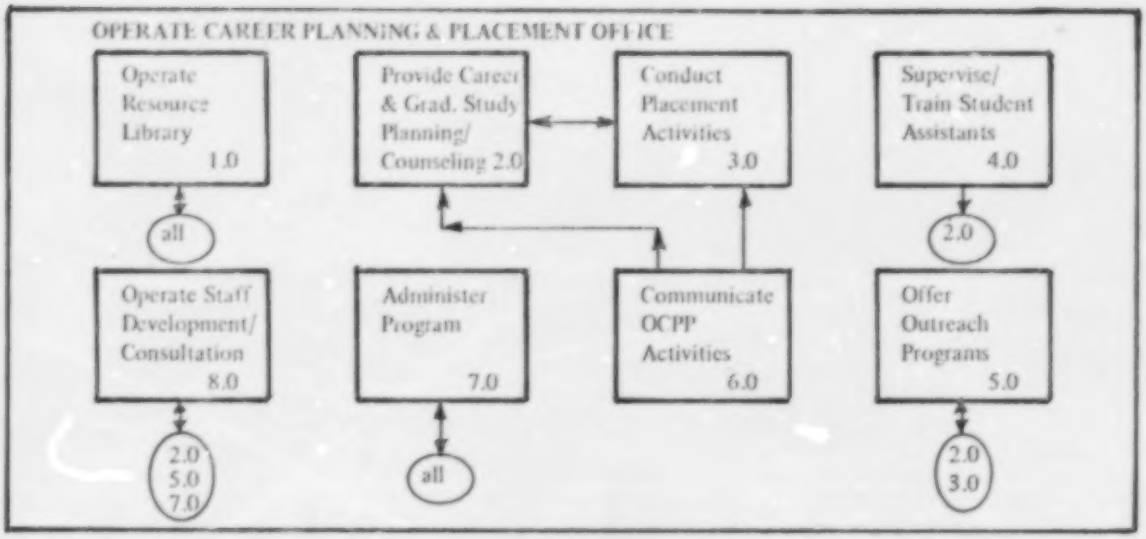

Figure 2

Career Planning and Placement

Program Design IPO Description for Total Program

INPUT	PROCESS	OUTPUT
Funding: third Office of Student Affairs Staff: 1 Director 1 Associate Director 2 Assistant Directors 3 Secretaries 1 Placement Interviewer 1 Architecture Career Advisor (½ time) 1 Librarian (½ time) Pre-law advisors Practicum students Work-Study Students University past/present students and staff and spouses of same Facilities: Office space Supplies Employers and Graduate/ Professional School Admission Officers Liaison: Student Affairs Offices	Career Planning & Placement offers career and graduate study planning/counseling services to students, alumni, staff and spouses. These programs and services are offered through individual/group counseling-advising programs, career/ graduate study outreach programs, provision of career, graduate study and employment resources, assistance in developing and utilizing placement credentials, arrangement of on-campus interviews with potential employers and graduate admissions officers, and administration of employment and graduate study examiniations.	Clients with an early interest in exploring career and graduate study options Clients who have assessed and clarified their short and long range career and graduate study goals Clients who have identified career and graduate study options and opportunities consistent with their short and long range goals Clients who have developed a systematic plan of action to achieve career and graduate study goals Clients with placement credentials and/or on-campus interviews with potential visiting employer

Figure 3

Career Planning and Placement

Program Design IPO Description for Exemplar Program

INPUT	PROCESS	OUTPUT
o Students who need counseling on career/ graduate study o Professional staff o Counseling department practicum student o Vocational interest inventories o Career awareness exercises o Other counseling materials o Resource library o Counseling rooms	2.0 PROVIDE CAREER AND GRADUATE STUDY PLANNING/COUNSELING Students are assigned to a member of the professional staff. After completion of an initial interview in which the student's needs are assessed, a number of options are available to the student and counselor. They are: (1) students may be assigned to a career exploration group. In this group they complete appropriate interest inventories, career awareness exercises, values clarification activities, and review materials in the Resource library; (2) Students may continue with individual counseling of an undetermined duration which would include some portions of the above activities; (3) Students and the counselor would explore career or curriculum major options; (4) Students would explore and examine graduate/ professional school study options.	o Students are aware of their own career interests, strengths and weaknesses, and the implications of their academic program for personal career direction. o Students are able to locate and evaluate appropriate career and graduate study resources. o Students have learned the process of career decision making for future use.

Figure 4

Career Planning and Placement

Evaluation Design for Exemplar Project

Evaluation Concern	Design Referent	Reason for Concern
A. Client's satisfaction with career counseling	Component 2.0	There has not been any formal assessment of clients' expectations and satisfactions concerning the counseling services offered by OCPP. Therefore, in order to strengthen and improve services, clients' attitudes will be assessed.
B. University community's perceptions of OCPP goals	Total Program	There has been some informal feedback from the University community that the major functions of OCPP should be placement-oriented. At the same time, OCPP's philosophy is directed more toward career planning. Consequently, OCPP management wished to assess formally the university community's perceptions of OCPP goals.
C. Effectiveness of placement services	Component 3.0	Since this is one of the more highly used services at OCPP, it is important to program management to receive timely feedback about clients (students, alumni, faculty, staff, and potential employers) perceptions and satisfaction of these services. This information will be used to strengthen and improve such services.